



Soda Bottle Submarine

Written By: Howtoons



TOOLS:

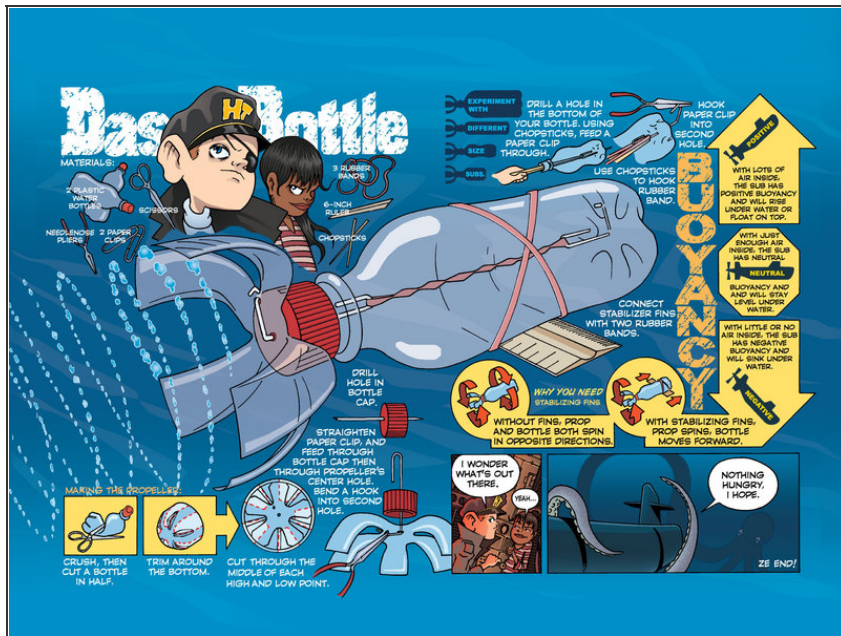
- [Needlenose pliers \(1\)](#)
- [Scissors \(1\)](#)




PARTS:

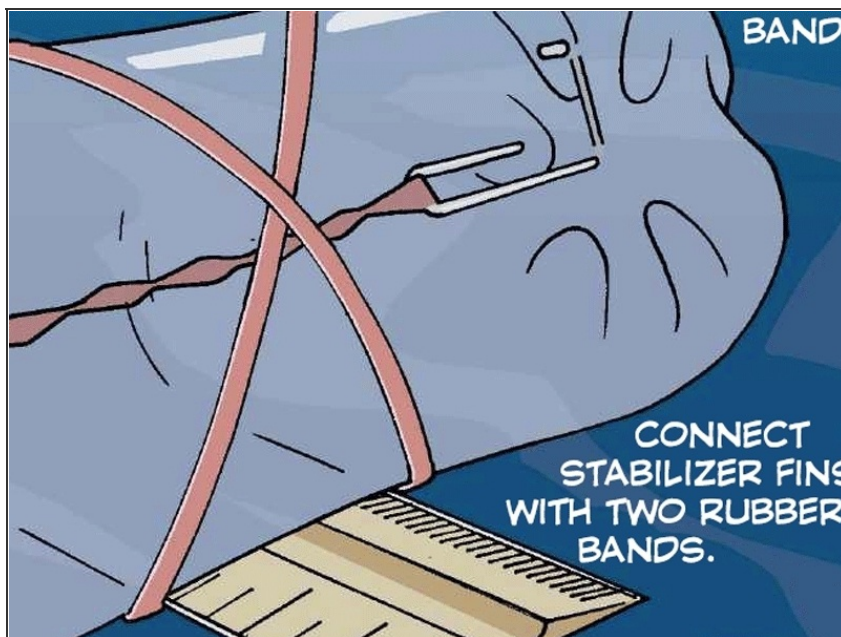
- [Water bottles \(2\)](#)
- [Ruler \(1\)](#)
- [Rubber bands \(3\)](#)
- [Chopsticks \(2\)](#)
- [Paper clips \(2\)](#)

Step 1 — Assemble the submarine interior.



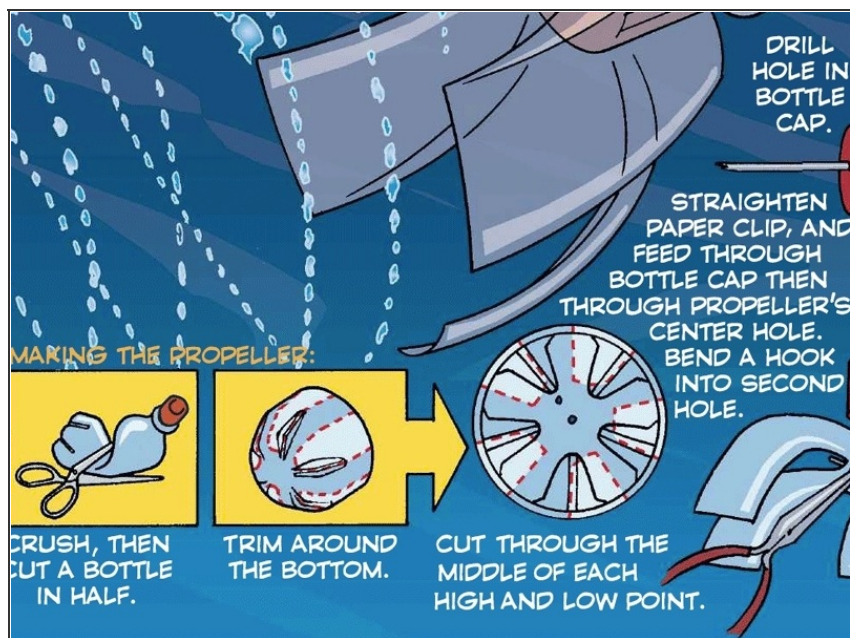
- To see the original Howtoons cartoon full-size,  click on the "View huge" link at the top left of this image (mouse over it and you'll see the link).
- Drill a hole in the bottom of your bottle.
- Using chopsticks, feed a paper clip through.
- Hook paper clip into second hole for stability.
- Use chopsticks to hook the rubber band to the paper clip.

Step 2



- Connect ruler stabilizer fins with 2 rubber bands.
- NOTE: Why you need stabilizer fins: Without fins, prop and bottle both spin in opposite directions. With stabilizing fins, the prop spins and the bottle moves forward.

Step 3 — Make the propeller.



- Crush, then cut a bottle in half.
- Trim around the bottom, and cut through the middle of each high and low point.
- Drill a hole in the bottle cap.
- Straighten paper clip, and feed through bottle cap then through propeller's center hole. Bend a hook into second hole.
- Attach loose end of rubber band to paper clip hook.

Step 4 — Experiment with buoyancy.



- With lots of air inside, the sub has positive buoyancy and will rise under water or float on top.
- With just enough air inside, the sub has neutral buoyancy and will stay level under water.
- With little or no air inside, the sub has negative buoyancy and will sink under water.

This project first appeared in [MAKE Volume 10](#).

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